ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FINAL WORK PLAN for the Development of the Remedial Investigation and Feasibility Study Report

Rocky Flats Environmental Technology Site
10808 Highway 93
Golden, CO 80403-8200

March 11, 2002

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ACRONYMS AND ABREVIATIONS

AL	Action Level
ALARA	As low as reasonably achievable
ALF	Action Levels Framework
AME	Actinide Migration Evaluation
ARAR	Applicable or Relevant and Appropriate Requirements
CAD	Corrective Action Decision
CDPHE	Colorado Department of Public Health and Environment
CEDE	Committed Effective Dose Equivalent
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminant of Concern
CMS	Corrective Measures Study
CFR	Code of Federal Regulations
CHWA	Colorado Hazardous Waste Act
CRA	Comprehensive Risk Assessment
DOE	U.S. Department of Energy
DQO	Data Quality Objective
EPA	Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
IHSS	Individual Hazardous Substance Site
NFA	No Further Action
IGD	Implementation Guidance Document
K-H	Kaiser-Hill Company, L.L.C.
LRA	Lead Regulatory Agency
PAC	Potential Area of Concern
PRG	Preliminary Remediation Goal
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFI	RCRA Facility Investigation
ROD	Record of Decision
RSAL	Radionuclide Soil Action Level
RSOP	RFCA Standard Operating Protocol
SR	Summary Report
SWWB	Site Wide Water Balance
TM	Technical Memorandum

1.0 INTRODUCTION

This Work Plan describes the activities that will be conducted in the preparation of a draft Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Remedial Investigation/Feasibility Study (RI/FS) report for the Rocky Flats Environmental Technology Site (RFETS or the Site). Because remedial activities at the Site are also being conducted under the Resource Conservation and Recovery Act (RCRA) and the Colorado Hazardous Waste Act (CHWA), the report will satisfy the RCRA/CHWA requirements for a RCRA Facility Investigation/Corrective Measures Study (RFI/CMS) report. For simplicity, the report is hereinafter referred to as the RI/FS report. The draft RI/FS report will be prepared concurrently with the conduct of accelerated actions that will be performed to achieve Site cleanup. When approved by the regulators, the RI/FS report will be the basis for development of a Proposed Plan that describes the preferred proposed final remedy for the Site. The Proposed Plan is the basis for the final Corrective Action Decision/Record of Decision (CAD/ROD).

2.0 BACKGROUND

In 1996, the Department of Energy (DOE), the Environmental Protection Agency (EPA), and the Colorado Department of Public Health and Environment (CDPHE) executed the Rocky Flats Cleanup Agreement (RFCA).[1] RFCA is the Federal Facility Compliance Agreement and Consent Order negotiated pursuant to CERCLA[2], RCRA[3], and the CHWA.[4] RFCA provides the regulatory framework for attaining the near and intermediate term objectives to cleanup the Site expressed in the Rocky Flats Vision and the RFCA Preamble.[5] DOE intends to achieve accelerated cleanup in a manner that is safe to workers and the public, and is protective of the environment. As provided in RFCA, DOE intends to disposition all special nuclear material (SNM) and regulated wastes; remove, size reduce, and decontaminate facility components ("deactivation"); demolish facilities ("decommissioning"); and cleanup contaminated areas ("environmental restoration [ER]") so that future land and water uses are adequately protected. Cleanup is currently scheduled for completion in December of 2006.

In order to streamline cleanup of the Site, RFCA adopted an accelerated action cleanup approach, as described in RFCA paragraph 79:

> To expedite remedial work and maximize early risk reduction at the Site, the Parties intend to make extensive use of accelerated actions to remove, stabilize, and/or contain Individual Hazardous Substance Sites (IHSSs).

DOE intends that completion of accelerated actions will achieve the RFCA Intermediate Site Condition with little or no further actions required to satisfy RCRA/CHWA and CERCLA requirements pursuant to any final CAD/ROD. Thus, it is important to formally document the expected final remedial action objectives, i.e., cleanup goals, and the key factors that influence how completion of accelerated actions

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1 Final Rocky Flats Cleanup Agreement (RFCA), Federal Facility Agreement and Consent Order (CERCLA VIII-96-21, RCRA 3008[h] VIII-96-01, State of Colorado Docket 96-07-19-01), July 19, 1996.

2 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9620 *et seq*.

3 Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments Act (HSWA) and the Federal Facility Compliance Act (FFCA), 42 USC 6901 *et seq*.

4 Colorado Hazardous Waste Act (CHWA), CRS 25-15-101 *et seq*.

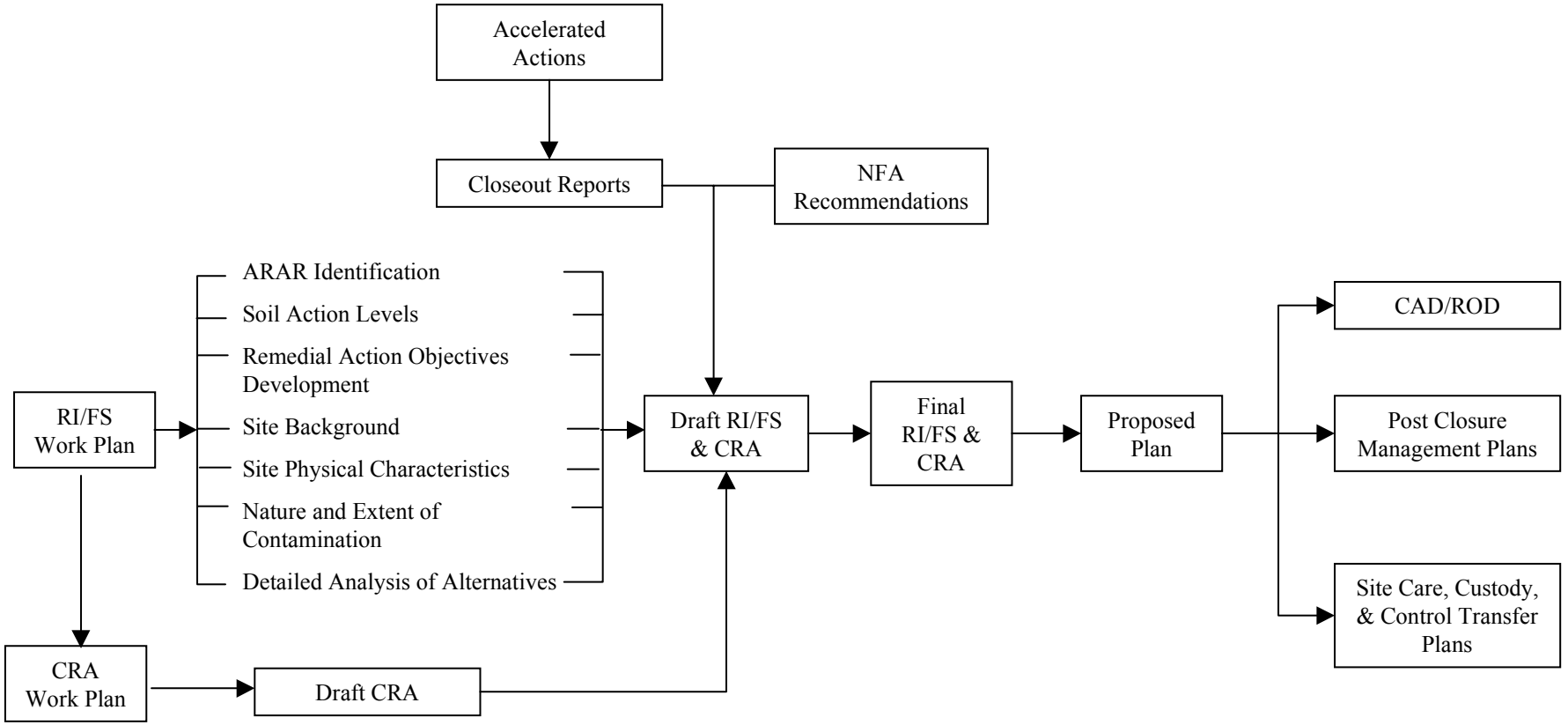
5 The Rocky Flats Vision is contained in Appendix 9 of RFCA.

will be highly consistent with these expected objectives or goals. The expected final cleanup goals will be described in Technical Memoranda (TMs). The TMs will provide the basis to modify, as appropriate, RFCA Attachments. Preparation of the TMs and modification of the RFCA Attachments are the first tasks to be performed pursuant to this Work Plan. Subsequent tasks include preparation of a Comprehensive Risk Assessment (CRA) Work Plan, a draft CRA, a Detailed Analysis of Alternatives TM, and Summary Reports (SRs) that constitute the remaining sections of the draft RI/FS report.

3.0 SCOPE OF WORK

TMs, SRs, and a draft CRA will be prepared over the course of Site cleanup. These documents, in aggregate, will constitute the draft RI/FS report. Initially, several TMs will be prepared to provide final cleanup goals for the Site. For the purposes of implementing this RI/FS work plan, TMs identified herein will be released for informal public comment, and submitted for regulator review and approval. Disapproval of a TM shall be subject to Dispute Resolution pursuant to RFCA Part 15, Subpart B. Subsequent modifications to RFCA Attachments based upon regulator-approved TMs shall be subject to review, including formal public review and comment, and approval pursuant to RFCA requirements. The SRs will be prepared to fulfill other CERCLA requirements for a RI/FS report, including a presentation of the Site background, the physical characteristics of the Site, and the nature and extent of contamination. The SRs will incorporate the results of completed characterizations, remedial action close out reports, and NFA documentation. A draft CRA will also be prepared that will provide an estimate of human health and ecological risk posed by the Site after completion of all accelerated actions. Lastly, a TM that provides a detailed evaluation of remedial alternatives for final action will be prepared. The TMs, SRs, and draft CRA will be assembled into the draft RI/FS report. The draft RI/FS report will be used to support DOE's preparation of a final RI/FS report, Proposed Plan and Record of Decision (Figure 1). The outline of the draft RI/FS report is presented in Attachment 1.

Figure 1. RI/FS Report's Relationship to Other Final Closure Documents



4.0 TECHNICAL REQUIREMENTS/TASKS

Preparation of the draft RI/FS report will require execution of 15 tasks that involve identifying Site cleanup goals, describing the Site condition after all accelerated actions are completed, conducting a risk assessment, preparing an analysis of remedial alternatives for final action, and assembling/editing the draft RI/FS report.

4.1 Task 1 – Prepare ARARs TM

A TM will be prepared that identifies the Applicable or Relevant and Appropriate Requirements (ARARs) for Site closure. While ARARs are not final until a final remedy has been selected in the CAD/ROD, it is anticipated that this TM will identify the ARARs that will inform the regulatory agencies' ultimate ARARs decision. Approval of the TM will allow accelerated actions and the detailed analysis of alternatives (Task 14) to be completed in accordance with the identified ARARs, to the extent practicable. Because the ARARs are not final until the CAD/ROD is approved, the ARARs could be modified during the CAD/ROD process.

This task will include a review of the latest Master List of Potential ARARs in the RFCA Implementation Guidance Document (IGD) and in recently prepared RFCA Standard Operating Protocols (RSOPs). The ARARs will be presented in a tabular format. The task includes incorporation of DOE and regulatory agency comments on the draft TM. The TM will be incorporated into the draft RI/FS report as Appendix F (See Attachment 1).

4.2 Task 2 – Prepare Soil Action Levels TM

To assess the need for, or extent of, remedial actions at potential contamination release sites, Action Levels (ALs) for environmental media were established and documented in RFCA Attachment 5, "Action Levels and Standards Framework for Surface Water, Ground Water, and Soils (ALF)" (March 21, 2000). Soil action levels are reviewed annually as part of the RFCA Annual Review process (RFCA paragraph 5).

A TM will be prepared that includes the rationale for new soil action levels, including the exposure model utilized as a basis, and the targeted risks to be attained. The TM will also identify the Contaminants of Concern (COCs) for the Site based on the screening activities conducted under Task 8, Prepare the CRA Work Plan. The task includes incorporation of DOE and regulatory agency comments on the draft TM. The TM will be incorporated into the draft RI/FS report as part of Section 3.2 (see Attachment 1).

4.3 Task 3 – Prepare Soils and Groundwater RAO TM

Remedial action objectives (RAOs) are the contaminants and medium specific goals designed to protect human health and the environment. These RAOs are used to develop Preliminary Remediation Goals (PRGs) that provide an acceptable contaminant level for each environmental medium. During the detailed analysis of alternatives (Task 14), remedial alternatives for final action will be evaluated, in part, based on their ability to achieve the PRGs. When the preferred final action is selected in the CAD/ROD, the PRGs will become remediation goals, and will be modified if necessary based on additional information gathered in the RI/FS.

A TM will be prepared that presents the RAOs for soils and groundwater. The RAOs will define human and ecological exposure scenarios consistent with the reasonably foreseeable anticipated future land use, the target risk levels, and the resulting PRGs for surface soil, subsurface soil, and groundwater (PRGs will be calculated under Task 8). Risk levels for unrestricted release will also be addressed. The RAOs will examine both CERCLA and RCRA requirements and will provide a unified approach to meeting these regulatory requirements. The task includes incorporation of DOE and regulatory agency comments on the draft TM. The TM will be incorporated into the draft RI/FS report as Sections 6.2 through 6.5 (see Attachment 1).

4.4 Task 4 – Prepare Surface Water RAO TM

The surface water RAO TM will define the cleanup goals for this environmental medium, and will define water quality parameters and standards to be met, points of compliance, and how compliance is to be demonstrated. The task includes incorporation of DOE and regulatory agency comments on the draft TM. The TM will be incorporated into the draft RI/FS report as Section 6.6 (see Attachment 1).

In the detailed analysis of alternatives (Task 14), final actions will be evaluated using the appropriate studies and models, to determine if the surface water RAOs can be met.

4.5 Task 5 – Modify RFCA Attachments

Attachment 5 to RFCA presents the action levels for soil, groundwater, and surface water, and accordingly, will require modification based on the soil action levels defined in the TM prepared under Tasks 2, as well as on the RAOs defined in the TMs prepared under Tasks 3 and 4. The ARARs presented in the Task 1 TM will be formatted as a new Attachment to RFCA. ARARs currently in Appendix J to the IGD may be deleted to avoid confusion. The RFCA attachment modifications will be subject to regulatory agency review and public comment. The task includes incorporation of regulatory agency and public comments on the RFCA Attachment modifications. Once approved, the RFCA Attachments will provide the guidelines for cleanup of the Site through accelerated actions.

4.6 Task 6 – Prepare Site Background SR

A SR will be prepared that summarizes background information for RFETS. The SR will include a site description, a discussion of the site history, operable units, previous investigations, and accelerated actions, and the results of previous CERCLA 5-year reviews. The information for this SR will be gathered from existing reports, and will be compiled and edited to satisfy the CERCLA RI report requirement. The SR will be incorporated into the draft RI/FS report as Section 1 (see Attachment 1).

4.7 Task 7 – Prepare Physical Characteristics of the Study Area SR

A SR will be prepared to summarize the physical characteristics of the Site, including surface features, meteorology, surface water hydrology, geology, soils, hydrogeology, demography and land use, and ecology. The information for this SR will be gathered from existing reports, and will be compiled and edited to satisfy the CERCLA RI report requirement. As appropriate, results from the Site Wide Water Balance (SWWB) will be included. The SR will include figures that adequately portray the physical characteristics of the Site. The SR will be incorporated into the draft RI/FS report as Section 2 (see Attachment 1).

4.8 Task 8 – Prepare the CRA Work Plan

A Comprehensive Risk Assessment (CRA) Work Plan will be prepared that details the activities that will be necessary to perform the CRA. The Work Plan will include the following:

1. Data Quality Objectives.
2. Site Conceptual Model including exposure scenarios, exposure pathways, and receptors.
3. Final list of COCs following statistical evaluation and preliminary screening.
4. Reasonably foreseeable anticipated land use and use restrictions for the Site.
5. Background concentrations for COCs.
6. Established detection limits for COCs.
7. COC physical and chemical characteristics.
8. Methods for conducting the exposure assessment, toxicity assessment, and the risk characterization.
9. Fate and transport models used to predict exposure point concentrations.
10. Calculated PRGs for surface soils, sediments, and groundwater from a human health and ecological perspective.

The Work Plan will be subject to DOE and regulatory agency review and approval. The task includes incorporation of DOE and regulatory agency comments on the draft Work Plan. The Work Plan will be incorporated into the draft RI/FS report as Sections 3.1 and 4, and Appendix E (see Attachment 1).

4.9 Task 9 – Prepare the Nature and Extent of Air Contamination SR

This SR will summarize the types of contaminants present in air at the Site, as well as their concentrations, on- and off-site. Both radionuclides and non-radionuclides will be addressed, although the focus will be on radionuclides. Sources and migration patterns for the contamination will be discussed. The SR will include figures that adequately portray the distribution and migration of contaminants in air at the Site, including depiction of any radiological contamination that exceeds applicable standards based on ARARs for the Site. The SR will serve to satisfy the CERCLA RI report requirements for a presentation of the nature and extent of air contamination. The SR will be incorporated into the draft RI/FS report as Section 3.6 (see Attachment 1).

4.10 Task 10 - Prepare the Nature and Extent of Groundwater Contamination SR

This SR will summarize the types of contaminants present in groundwater at the Site, as well as their distribution in the various hydrostratigraphic units. Sources, migration pathways, and impacts of the contamination will be assessed and depicted, as will the passive treatment systems that are in place to intercept the contamination. As appropriate, results from the SWWB and Actinide Migration Evaluation (AME) will be included. The SR will include figures that adequately portray the distribution and migration of contaminants in groundwater at the Site, including the extent of contamination above surface water standards. The information for this SR will be gathered from existing reports, and will be compiled and edited to satisfy the CERCLA RI report requirement. The SR will be incorporated into the draft RI/FS report as Section 3.4 (see Attachment 1).

4.11 Task 11 – Prepare the Nature and Extent of Surface Water and Sediment Contamination SR

This SR will summarize the types of contaminants present in surface water and sediments at the Site, as well as their distribution in the three drainages; Woman Creek, North Walnut Creek, and South Walnut Creek (and tributaries thereto). Groundwater and surface soil sources for the contamination will be depicted. As appropriate, results from the SWWB and AME will be included to support demonstration of compliance with surface water quality standards. The SR will include figures that adequately portray the distribution and migration of contaminants in surface water at the Site. The SR will be incorporated into the draft RI/FS report as Section 3.5 (see Attachment 1).

4.12 Task 12 – Prepare the Nature and Extent of Soil Contamination SR

This SR will summarize the types of contaminants present in soil at the Site, as well as their areal and vertical distribution. The SR will include figures that adequately portray the distribution of contaminants in surface and subsurface soil at the Site, including the extent of contamination above the respective preliminary remediation goals (PRGs) defined by the Task 3 TM. Results from the AME will be incorporated, as appropriate. The SR will be incorporated into the draft RI/FS report as Sections 3.3 (see Attachment 1).

4.13 Task 13 – Prepare the Draft Comprehensive Risk Assessment

A draft CRA will be prepared to support the RI/FS for the Site. The draft CRA will evaluate human health and ecological risks posed by the Site at the conclusion of accelerated remedial actions.

The exposure assessment will encompass Data Quality Objectives, identification of COCs and their physical and chemical characteristics, assessment and selection of exposure pathways receptors, discussion of sources of contamination and source term quantification, transport modeling as necessary to predict exposure point contaminant concentrations, and quantification of intake to receptors. Transport modeling will include air dispersion modeling and groundwater transport in the unsaturated and saturated zones as required to estimate contaminant concentrations from source terms to potential receptor locations. Groundwater transport will be assessed as a function of time to evaluate potential impacts on surface water and support remedial action decisions of contaminant plumes and source terms.

The toxicity assessment will include review of available databases for oral and inhalation Reference Doses, Reference Concentrations, and slope factors for selected COCs. Reference Doses and slope factors will be derived for those COCs without published limits.

Following the screening process and comparison to natural background, risk characterization will utilize results of the intake and toxicity assessment results to calculate hazard indices and carcinogenic risk for COCs retained. Hazard indices will be summed for all chemical COCs to quantify the cumulative impact to each receptor exposed to the potential inhalation of airborne contaminants, and ingestion of contaminated surface water, groundwater, and surface soils. Carcinogenic risks will be determined in a similar manner for all radiological COCs. Dermal and external exposure pathways will also be assessed. A qualitative uncertainty analysis will be conducted to assess the primary sources of uncertainty in the human health risk assessment results.

An ecological risk screening assessment was performed for areas in the buffer zone. Under this task, an ecological risk screening assessment will be conducted for areas that have not yet been addressed using existing data for COCs in soils.

A summary ecological risk assessment document will be developed to evaluate and resolve all potential COCs exceeding screening levels for eco-receptors identified in the ecological risk screening reports for the buffer zone and industrial area. Screening results will be used to derive remedial cleanup levels in surface water, soils, and sediments as necessary to ensure adequate protection of identified species in the buffer zone and Industrial Area.

A summary and conclusions section will be completed for the draft CRA to identify primary issues of concern, and discuss findings of the report. The draft CRA will be incorporated into the draft RI/FS report as Section 5 (see Attachment 1).

4.14 Task 14 – Prepare the Detailed Analysis of Alternatives TM

This TM will provide a detailed analysis of at least 3 remedial alternatives applicable to final closure of the Site after completion of all accelerated actions. The alternatives selected for detailed analysis will reflect discussions between DOE and the regulatory agencies, as documented in the CERCLA Administrative Record, regarding development and screening of alternatives relative to the RFETS end state. The detailed analysis will evaluate the alternatives against the nine CERCLA criteria, and take into consideration long-term stewardship. The stewardship evaluation will examine post-closure requirements of each remedial alternative. The evaluation of the alternatives will consider predicted contaminant fate and transport over time. The task includes incorporation of DOE and regulatory agency comments on the draft TM. The TM will be incorporated into the draft RI/FS report as Section 7 (See Attachment 1).

4.15 Task 15 – Prepare the Draft RI/FS Report

This task includes all activities required for assembly of the draft RI/FS report (Attachment 1). Unlike the traditional RI and FS reports prepared under CERCLA (or RCRA), the draft RI/FS report will be a single document that contains the essential features of a RI and FS report.

Activities to be conducted under this task include incorporating the TMs, SRs and draft CRA into the report, as well as compiling the appendices. The appendices include summaries of no further action determinations, long-term stewardship considerations for accelerated actions, and closeout reports. An Executive Summary and a Summary and Conclusions (Section 8) will also be prepared for the draft RI/FS report.

5.0 SCHEDULE

The schedule for preparation of the draft RI/FS is presented in Attachment 2. The tasks for preparing the TMs involving cleanup goals, modifying the RFCA attachments (if required), and preparing the CRA Work Plan (Tasks 1 through 5, and 8) will be conducted in the first year because of their importance in ensuring that accelerated actions are consistent with the approved RAOs. Tasks 6, 7 and 9, which represent assembling and editing current information about the Site, have been shown to follow in sequence after completion of Task 5. However, these tasks can be started earlier because they are not dependent on final Site conditions, albeit some modifications may be necessary during compilation of the draft RI/FS

report. Tasks 10 through 12 are sequenced after completion of Task 9, and Tasks 13 and 14 are scheduled towards the end of Site cleanup because they cannot be completed until all final Site data are available. The final task, preparing the draft RI/FS report, is scheduled to be completed by mid December 2005. This schedule is for information only and the sequencing of Tasks may change as information develops. The schedule is not an enforceable requirement of RFCA and it will be updated periodically as work progresses.

ATTACHMENT 1
Streamlined Remedial Investigation/Feasibility Study Report Outline

Executive Summary

1. Introduction
   - 1.1 Purpose of Report
   - 1.2 Site Background
     - 1.2.1 Site Description
     - 1.2.2 Site History
     - 1.2.3 Operable Units (*original and current*)
     - 1.2.4 Previous Investigations
     - 1.2.5 Previous Interim Measures/Interim Remedial Actions
     - 1.2.6 Existing Records of Decision
     - 1.2.7 Site Characterizations and Accelerated Actions
   - 1.3 Report Organization
2. Physical Characteristics of the Study Area
   - 2.1 Introduction
   - 2.2 Surface Features
   - 2.3 Meteorology
   - 2.4 Surface-Water Hydrology
   - 2.5 Geology
   - 2.6 Soils
   - 2.7 Hydrogeology
   - 2.8 Demography and Land Use
   - 2.9 Ecology
3. Nature and Extent of Contamination
   - 3.1 Site Conceptual Model
   - 3.2 Action Levels
   - 3.3 Surface and Subsurface Soils
     - 3.3.1 Surface Soil
     - 3.3.2 Subsurface Soil
   - 3.4 Ground Water
   - 3.5 Surface Water and Sediments
     - 3.5.1 Surface Water
     - 3.5.2 Sediments
   - 3.6 Air
4. Contaminant Fate and Transport
   - 4.1 Potential Routes of Migration (i.e., air, ground water, etc.)
   - 4.2 Contaminant Persistence
   - 4.3 Contaminant Migration

5. Comprehensive Risk Assessment
   - 5.1 Human Health Evaluation

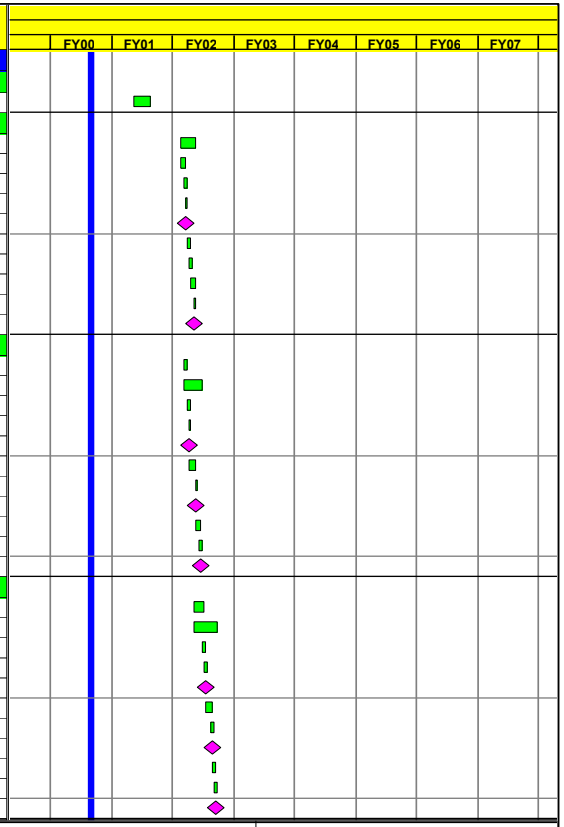
ATTACHMENT 2

DRAFT RI/FS REPORT

SCHEDULE

Draft RI/FS Report Schedule

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Free Float	Total Float
1.G.A.B.0C.02 Buffer Zone ROD(s) - (Interim/Final ROD)						
G00 ER Project						
1GFR000010	Develop Interim Final CAD/ROD Scope	60	08FEB01*	10MAY01	119	154
GF1 RI/FS Work Plan						
1GFR001000	RI/FS Work Plan	49*	19NOV01	07FEB02	0	35
1GFR001010	Prepare Draft RI/FS Workplan	10	19NOV01*	05DEC01	0	35
1GFR001020	Internal Review of Draft RI/FS Workplan	5	06DEC01	13DEC01	0	35
1GFR001030	Incorp Internal Comments on Draft RI/FS Workplan	5	14DEC01	20DEC01	0	35
1GFR001040	Submit Draft RI/FS Workplan to DOE	0		20DEC01	0	35
1GFR001050	DOE Review Draft RI/FS Workplan	10	24DEC01	09JAN02	0	35
1GFR001060	Incorporate DOE Comments on Draft RI/FS Workplan	5	10JAN02	16JAN02	0	35
1GFR001070	Dft RI/FS Work Plan - Agency Review & Comment	14	17JAN02	30JAN02	0	55
1GFR001080	Dft RI/FS Work Plan - Incorp Agency Comments	5	31JAN02	07FEB02	0	35
1GFR001090	Draft RI/FS Workplan Approved by Agencies	0		07FEB02	0	35
GF2 Applicable or Relevant and Appropriate Req's						
1GFR002010	Prepare Draft ARAR's TM	10	06DEC01	20DEC01	0	64
1GFR002000	ARAR's Technical Memorandum	59*	06DEC01	11MAR02	0	154
1GFR002020	Internal Review Draft ARAR's TM	5	24DEC01	31DEC01	0	154
1GFR002030	Incorporate Internal Comments ARAR's TM	5	02JAN02	09JAN02	0	154
1GFR002040	Submit Draft ARAR's TM to DOE	0		09JAN02	0	154
1GFR002050	DOE Review Draft ARAR's TM	20	10JAN02	08FEB02	0	154
1GFR002060	Incorporate DOE Comments on Draft ARAR's TM	5	11FEB02	18FEB02	0	154
1GFR002070	Submit ARAR's TM to Regulatory Agencies	0		18FEB02	0	154
1GFR002080	Agency Review & Comment ARAR's TM	14	19FEB02	04MAR02	0	244
1GFR002090	Incorporate Agency Comments ARAR's TM	5	05MAR02	11MAR02	0	154
1GFR002100	Agency Approval of ARAR's TM	0		11MAR02	118	154
GF3 Soil Action Levels						
1GFR004010	Prepare Draft Soil Action Levels TM	30	08FEB02	26MAR02	0	35
1GFR004000	Soil Action Levels Technical Memorandum	78*	08FEB02	11JUN02	0	96
1GFR004020	Internal Review Draft SAL's TM	5	27MAR02	03APR02	0	95
1GFR004030	Incorporate Internal Comments SAL's TM	5	04APR02	10APR02	0	95
1GFR004040	Submit Draft SAL's TM to DOE	0		10APR02	0	95
1GFR004050	DOE Review Draft SAL's TM	20	11APR02	13MAY02	0	95
1GFR004060	Incorporate DOE Comments on Draft SAL's TM	5	14MAY02	20MAY02	0	95
1GFR004070	Submit SAL's TM to Regulatory Agencies	0		20MAY02	0	95
1GFR004080	Agency Review & Comment SAL's TM	14	21MAY02	03JUN02	0	153
1GFR004090	Incorporate Agency Comments SAL's TM	5	04JUN02	11JUN02	0	96
1GFR004100	Agency Approval of SAL's TM	0		11JUN02	60	96



Start Date 01FEB99
Finish Date 15DEC05
Data Date 22MAY00
Run Date 31OCT01 10:09

Early Bar
Progress Bar
Critical Activity

2138 Sheet 1 of 4

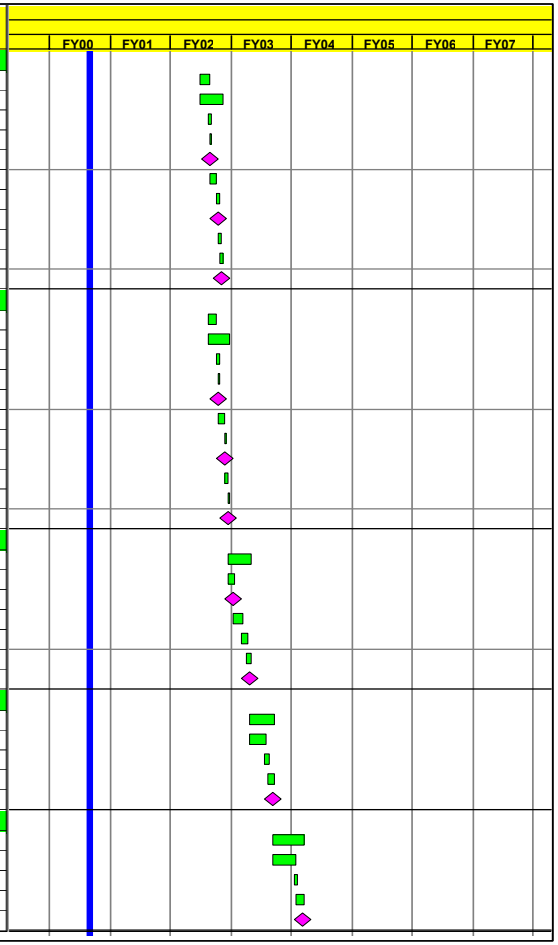
KAISER - HILL COMPANY

BCP 2138 Proposed Schedule

CLOSURE KAISER-HILL 2006 ROCKY FLATS CLOSURE PROJECT

Draft RI/FS Report Schedule, cont.

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Free Float	Total Float
GF4 RAO's for Soils & Groundwater						
1GFR003010	Prepare Draft Soils & Groundwater RAO's TM	30	27MAR02	13MAY02	0	35
1GFR003000	Soils & Groundwater RAO's Technical Memorandum	79*	27MAR02	30JUL02	0	65
1GFR003020	Internal Review Draft S & GW RAO's TM	5	14MAY02	20MAY02	0	65
1GFR003030	Incorporate Internal Comments S & GW RAO's TM	5	21MAY02	29MAY02	0	65
1GFR003040	Submit Draft S & GW RAO's TM to DOE	0		29MAY02	0	65
1GFR003050	DOE Review Draft S & GW RAO's TM	20	30MAY02	28JUN02	0	65
1GFR003060	Incorporate DOE Comments on Dft S & GW RAO's TM	5	01JUL02	09JUL02	0	65
1GFR003070	Submit S & GW RAO's TM to Regulatory Agencies	0		09JUL02	0	65
1GFR003080	Agency Review & Comment S & GW RAO's TM	14	10JUL02	23JUL02	0	103
1GFR003090	Incorporate Agency Comments S & GW RAO's TM	5	24JUL02	30JUL02	0	65
1GFR003100	Agency Approval of S & GW RAO's TM	0		30JUL02	29	65
GF5 RAO's for Surface Water						
1GFR005010	Prepare Draft Surface Water RAO's TM	30	14MAY02	28JUN02	0	35
1GFR005000	Surface Water RAO's Technical Memorandum	78*	14MAY02	16SEP02	0	36
1GFR005020	Internal Review Draft Surface Water RAO's TM	5	01JUL02	09JUL02	0	35
1GFR005030	Incorp Internal Comments Surface Water RAO's TM	5	10JUL02	16JUL02	0	35
1GFR005040	Submit Draft Surface Water RAO's TM to DOE	0		16JUL02	0	35
1GFR005050	DOE Review Draft Surface Water RAO's TM	20	17JUL02	15AUG02	0	35
1GFR005060	Incorp DOE Comments on Surface Water RAO's TM	5	19AUG02	23AUG02	0	35
1GFR005070	Submit Surface Water RAO's TM to Agencies	0		23AUG02	0	35
1GFR005080	Agency Review & Comment Surface Water RAO's TM	14	24AUG02	06SEP02	2	58
1GFR005090	Incorp Agency Comments Surface Water RAO's TM	5	09SEP02	16SEP02	0	36
1GFR005100	Agency Approval of Surface Water RAO's TM	0		16SEP02	0	36
GF6 Modify Attachments to RFCA						
1GFR006100	Modify Attachments to RFCA	76*	17SEP02	16JAN03	0	35
1GFR006110	Prepare RFCA Attachments Modifications	20	17SEP02	16OCT02	0	36
1GFR006120	Submit RFCA Attch Mods to Agencies(Public Rvw)	0		16OCT02	0	36
1GFR006130	Public Review of RFCA Attachments Mods	45	17OCT02	30NOV02	1	58
1GFR006140	Incorporate Public Comments to RFCA Attach Mods	20	02DEC02	02JAN03	0	35
1GFR006150	Agency Review & Approval of RFCA Mods	14	03JAN03	16JAN03	3	55
1GFR006160	RFCA Attachments Mods Approved by Agencies	0		16JAN03	0	35
GF7 Site Background						
1GFR007000	Site Background Summary Report	90*	20JAN03	09JUN03	0	35
1GFR007020	Prepare Draft Site Background Summary Report	60	20JAN03	21APR03	0	35
1GFR007030	Internal Review of Site Background Summary Rpt	10	22APR03	06MAY03	0	35
1GFR007040	Inc Internal Comments on Dft Site Bkgrnd SR	20	07MAY03	09JUN03	0	35
1GFR007050	Submit Draft Site Background Summary Rpt to DOE	0		09JUN03	0	35
GF8 Physical Characteristics of Study Area						
1GFR008000	Physical Characteristics of Study Area Summ Rpt	110*	10JUN03	02DEC03	0	35
1GFR008020	Prepare Draft Physical Characteristics Summ Rpt	80	10JUN03	14OCT03	0	35
1GFR008030	Internal Rev of Physical Characteristics SR	10	15OCT03	29OCT03	0	35
1GFR008040	Inc Comments Draft Physical Charact. SR	20	30OCT03	02DEC03	0	35
1GFR008050	Submit Draft Physical Charact. Summ Rpt to DOE	0		02DEC03	0	35



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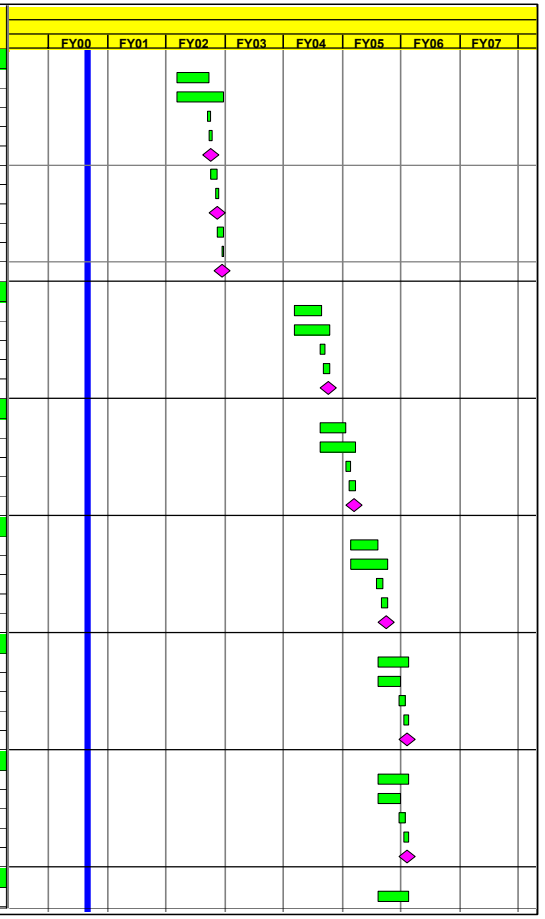
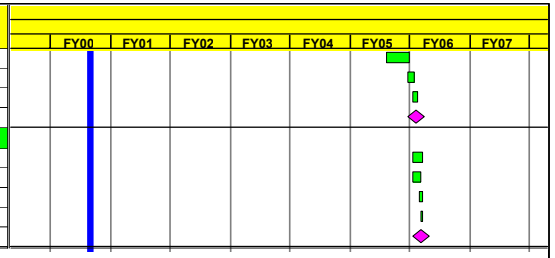
Draft RI/FS Report Schedule, cont.

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Free Float	Total Float
GF9 Comprehensive Risk Assessment Workplan						
1GFR009010	Prepare Draft CRA Work Plan	120	06DEC01	14JUN02	0	608
1GFR009000	Dft Comprehensive Risk Assessment Work Plan	177*	06DEC01	16SEP02	0	611
1GFR009020	Internal Review Draft CRA Workplan	5	17JUN02	24JUN02	0	608
1GFR009030	Incorporate Internal Comments Dft CRA Workplan	5	25JUN02	01JUL02	0	608
1GFR009040	Submit Draft CRA Workplan to DOE	0		01JUL02	0	608
1GFR009050	DOE Review Draft CRA Workplan	20	02JUL02	01AUG02	0	608
1GFR009060	Incorporate DOE Comments Dft CRA Workplan	5	05AUG02	09AUG02	0	608
1GFR009070	Submit Dft CRA Workplan to Regulatory Agencies	0		09AUG02	0	608
1GFR009080	Agency Review & Comment Dft CRA Workplan	30	10AUG02	08SEP02	0	977
1GFR009090	Incorporate Agency Comments Dft CRA Workplan	5	09SEP02	16SEP02	0	611
1GFR009100	Draft CRA Workplan Approved by Agencies	0		16SEP02	606	611
GG1 Nature & Extent of Air Contamination						
1GFR010100	Prepare Draft N&E of Air Contamination SR	100	03DEC03	10MAY04	0	35
1GFR010000	Nature & Extent of Air Contamination Summ Report	135*	03DEC03	06JUL04	0	310
1GFR010110	Internal Rev N&E of Air Contamination SR	15	11MAY04	02JUN04	0	310
1GFR010120	Inc Comments N&E of Air Contamination SR	20	03JUN04	06JUL04	0	310
1GFR010130	Submit Draft N&E of Air Cont. Summary Rpt to DOE	0		06JUL04	305	310
GG2 Nature & Extent of Groundwater Contamination						
1GFR011100	Prepare Draft N&E of Groundwater Cont Summ Rpt	100	11MAY04	15OCT04	0	35
1GFR011000	Nature & Extent of Groundwater Cont. SR	135*	11MAY04	13DEC04	0	210
1GFR011110	Internal Rev N&E of Groundwater Cont. SR	15	18OCT04	09NOV04	0	210
1GFR011120	Inc Comments N&E of Groundwater Cont. SR	20	10NOV04	13DEC04	0	210
1GFR011130	Submit Draft N&E of GW Cont. Summ Report to DOE	0		13DEC04	205	210
GG3 Nature & Extent of Surface Water & Sediment Cont						
1GFR012100	Prepare Draft N&E of Surface Water Cont Summ Rpt	100	23NOV04	02MAY05	0	12
1GFR012000	Nature & Extent of Surface Water & Sed Cont SR	135*	23NOV04	27JUN05	0	87
1GFR012110	Int. Rev N&E of Surface Water & Sed Cont. SR	15	03MAY05	25MAY05	0	87
1GFR012120	Inc Comments N&E Surface Water & Sed Cont. SR	20	26MAY05	27JUN05	0	87
1GFR012130	Submit Draft N&E of SW & Sed Cont. SR to DOE	0		27JUN05	82	87
GG4 Nature & Extent of Soil Contamination						
1GFR013000	Nature & Extent of Soil Contamination Summ Rpt	110*	13MAY05	03NOV05	0	5
1GFR013200	Prepare Draft N&E of Soil Cont. Summary Rpt	80	13MAY05	19SEP05	0	5
1GFR013210	Int. Rev N&E of Soil Cont. Summary Rpt	15	20SEP05	12OCT05	0	5
1GFR013220	Inc Comments N&E Soil Cont. Summary Rpt	15	13OCT05	03NOV05	0	5
1GFR013230	Submit Dft N&E of Soil Cont. Summary Rpt to DOE	0		03NOV05	0	5
GG5 Comprehensive Risk Assessment						
1GFR014000	Draft Comprehensive Risk Assessment	110*	13MAY05	03NOV05	0	5
1GFR014010	Prepare Draft CRA	80	13MAY05	19SEP05	0	5
1GFR014020	Review of Draft CRA	15	20SEP05	12OCT05	0	5
1GFR014030	Incorporate Internal Comments Draft CRA	15	13OCT05	03NOV05	0	5
1GFR014040	Submit Draft CRA to DOE	0		03NOV05	0	5
GG6 Detailed Analysis of Alternatives						
1GFR015000	Detailed Analysis of Alternatives	110*	13MAY05	03NOV05	0	5



Draft RI/FS Report Schedule, cont.

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Free Float	Total Float
1GFR015010	Prepare Draft Detailed Analysis of Alternatives	80	13MAY05	19SEP05	0	5
1GFR015020	Review Draft Analysis of Alternatives	15	20SEP05	12OCT05	0	5
1GFR015030	Incorporate Internal Comments Analysis of Altern	15	13OCT05	03NOV05	0	5
1GFR015040	Submit Draft Detailed Analysis of Alt. to DOE	0		03NOV05	0	5
GG7 Draft RI/FS Report						
1GFR016000	Draft RI/FS Report	30*	20OCT05	08DEC05	0	5
1GFR016010	Prepare Draft RI/FS Report	20	20OCT05	21NOV05	0	5
1GFR016020	Internal Review of Draft RI/FS Repor	5	22NOV05	30NOV05	0	5
1GFR016030	Incorp Internal Comments on Draft RI/FS Rp	5	01DEC05	08DEC05	0	5
1GFR016040	Submit Draft RI/FS Report to DOE	0		08DEC05	5	5



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